## CONTENTS

CHA	APTER ONE	
Lin	es and Angles	
1.1	Review of Basic Concepts	2
1.2	Pair of Angles	4
1.3	Angle Made by a Transversal	13
CHA	APTER TWO	
Tri	angles and Polygons	
2.1	Triangle	22
2.2	Regular Polygons	32
2.3	Congruent Triangles	38
2.4	Similar Triangles	46
CHA	APTER THREE	
Qu	uadrilaterals	
3.1	Properties of Parallelogram	58
3.2	Construction of Rectangle and Trapezium	66
CHA	APTER FOUR	
Sol	lids	
4.1	Nets of Solids	72
CHA	APTER FIVE	
Co	ordinates and Pythagoras Theorem	
5.1	Pythagoras Theorem and Distance between Two Points	80

## CHAPTER SIX

## Area and Volume

6.1	Area of Triangle and Quadrilateral	90
6.2	Circle	98
6.3	Volume of Prism and Cylinder	104
СН	APTER SEVEN	
Tro	ansformations, Bearing and Scale	
	awing	
7.1	Translation	112
7.2	Reflection	117
7.3	Rotation	122
7.4	Bearing and Scale Drawing	128
CH	APTER EIGHT	
Se	t	
8.1	Review of Basic Terms on Sets	138
8.2	Subsets	144
8.3	Union and Intersection of Sets	148
8.4	Use of Venn-diagram	154
CH	APTER NINE	
Νι	ımber System	
9.1	Whole Number	160
9.2	Integer	167
9.3	Rational Number	168
9.4	Real Number	172

CHA	APTER TEN	
Rat	io and Proportion	
10.1	Ratio and Proportion	182
10.2	Percentage	188
CHA	APTER ELEVEN	
Pro	fit, Loss and Discount	
11.1	Profit and Loss – I	196
11.2	Profit and Loss – II (Involving Percentage)	199
11.3	Discount and VAT	203
CHA	APTER TWELVE	
Un	itary Method and Simple Interest	
12.1	Unitary Method	208
12.2	Simple Interest	213
CHA	APTER THIRTEEN	
Sta	tistics	
13.1	Tabulation and Presentation of Data	218
13.2	Measures of Central Tendency	226
13.3	Quartiles and Range	233
13.4	Working with Grouped Frequency Table	237
CHA	APTER FOURTEEN	
Alg	ebraic Expression	
14.1	Factorization – I	244
14.2	Factorization – II	248
14.3	Geometric meaning and use of (a+b)3	252

14.4	HCF and LCM	256		
14.5	Rational Expressions	261		
14.6	Simplification of Rational Expressions	268		
14.7	Exponents	272		
CHAPTER FIFTEEN				
Equations, Graphs and Inequalities				
15.1	Problems on Linear Equation in One Variable	278		
15.2	Drawing the Graph of a Straight Line	284		
15.3	Solving System of Linear Equations in Two Variables	291		
15.4	Linear Inequalities in One Variable	298		
15.5				

## PREFACE

The Quality Mathematics series for school students is developed to promote meaningful and enjoyable learning resources in school mathematics. This series is developed according as the existing school curriculum of Nepal. While developing this series we incorporated the global practices as well as local need and interest of the students. This series is developed considering our experiences in the development of mathematics curriculum, learning materials, training materials and textbook, and in teaching and conducting teachers' training. The results from the experiments conducted during the process of writing this book have also been considered while developing this book. The Quality Mathematics Book 8, one of the books of the series, has been designed for grade eight students of Nepal following strictly the curriculum developed by the Curriculum Development Centre, Government of Nepal.

Each lesson of this book is structured in such a way that student will be able to develop basic concepts on the contents of the lesson and apply those concepts in solving problems. The main objective of such structure of lesson is to make learning meaningful and provide students with contextual and motivating learning environment. The structure of the book encourages and provides opportunity to the students to work themselves with the suggested activities. It also encourages working in small groups or pairs for suggested activities or solving the problems. In each chapter conceptualization begins with either recalling previous knowledge and experiences or presenting relevant examples and activities. The lessons in the book provide opportunity to identify relevant relations, methods, rules and formulas through contextual examples and activities. Contextual examples, pictures and activities have been included to create meaningful and interesting learning environment. Mathematics laboratory activities are suggested to encourage students' creativity and providing them with participatory and learning by doing environment. In order to reinforce problem solving skills and motivating students for practicing similar problems varieties of workout examples are included in each lesson.

Generally, there are four categories of problems in each exercise. Oral exercises are designed for immediate feedback to the students by evaluating their mastery in basic concepts and ideas leant in the lesson. Three groups (A, B and C) of written exercises are arranged according to their level of increasing difficulties and the level and forms of application. These groups are a kind of hierarchical chain of group